

ENVIRONMENTAL HEALTH & SAFETY

UNIVERSITY *of* WASHINGTON

UNIVERSITY OF WASHINGTON BOATING SAFETY MANUAL

MARCH 2022



EMERGENCY & REFERENCE CONTACTS

Emergency	911
US Coast Guard (USCG)	(888) 427-5662
USCG Emergency VHF Radio	Channel 16
Seattle Harbor Patrol	(206) 684-4071
Environmental Health and Safety Department (EH&S) Boating Safety Program Manager	(206) 616-3776
EH&S Department	(206) 543-7262
UW Police Department or emergency line	(206) 685-8973
Departmental Contact (s): _____ _____ _____	



TABLE OF CONTENTS

Emergency & Reference Contacts	2
TABLE OF CONTENTS	3
PART 1: POLICIES FOR ALL VESSELS	6
SECTION 1.0: OVERVIEW	6
1.1 Purpose.....	6
1.2 Contents	6
1.3 Applicability	7
SECTION 2.0: ROLES AND RESPONSIBILITY	8
2.1 Environmental Health and Safety Department (EH&S)	8
2.2 Department Owner or Operator	8
2.3 Boating Safety Advisory Committee (BSAC).....	8
2.4 Boating Safety Program Manager (BSM)	9
2.5 Principal Investigator or Supervisor	9
2.6 Boat Operator	10
2.7 Crew Member.....	11
2.8 Occupant	11
SECTION 3.0: GOVERNING STANDARDS	11
3.1 Boat sizes and standards	12
SECTION 4.0: RECORDKEEPING AND ACCIDENT REPORTING.....	12
4.1 Maintenance of records	13
4.2 Accident and incident reporting.....	13
4.3 Reporting oil/fuel spills.....	13
PART 2: POLICIES FOR VESSELS UNDER 40 FEET	14
SECTION 5.0: ADMINISTRATIVE PROCEDURES AND REQUIREMENTS	14
5.1 Non-motored vessels	14
5.2 Authorization of operators for Class I and II motored vessels	14
5.3 Maintaining authorization.....	15
5.4 Revocation of authorization.....	15

5.5	Re-authorization	15
5.6	Training and operator licensing.....	15
5.7	Area of operation.....	15
5.8	Vessel and equipment maintenance.....	16
5.9	Chartering vessels.....	17
SECTION 6.0: OPERATIONAL PROCEDURES.....		17
6.1	Float plans	17
6.2	Safety checks.....	18
6.3	Crew requirements.....	18
6.4	Stability	18
6.5	Communications.....	19
6.6	Pacific northwest navigational issues	19
6.7	Weather	19
6.8	Launching	20
6.9	Trailerling.....	20
SECTION 7.0: EMERGENCY PROCEDURES:.....		20
7.1	Vessel breakdown.....	21
7.2	Grounding, striking submerged objects, and boat leaks.....	21
7.3	Vessel capsizing or sinking.....	21
7.4	Overboard person	22
7.5	Oil/fuel spills.....	22
7.6	Distress call.....	23
7.7	Other health and safety considerations	23
PART 3: POLICIES FOR OVER 40 FEET		25
SECTION 8.0: LARGE VESSEL FLEET		25
8.1	Vessel classification	25
8.2	Regulating policies.....	25
8.3	Requirements for operators	26
8.4	Operational and emergency procedures.....	26

APPENDIX 1	27
Safety equipment	27
APPENDIX 2	28
Float plan	28
APPENDIX 3	29
Request for Scientific Boating Project Approval or Renewal	29
APPENDIX 4	31
Boating emergency management procedures	31
APPENDIX 5	33
Template Underway Hours Log	33
APPENDIX 6	34
University of Washington Boating Safety Program Application and Verification of Boater's Training and Experience	34

PART 1: POLICIES FOR ALL VESSELS

SECTION 1.0: OVERVIEW

1.1 PURPOSE

The University of Washington (UW) has a unique blend of water-based research, academic, and recreation activities. Boats are utilized to support these activities, and personal safety and stewardship for the environment are paramount. This manual provides the minimum standards and best practices for University operations involving boats. University departments may implement more stringent or additional requirements beyond those indicated in this manual.

The purpose of a boating safety program is to:

1. Ensure the personal safety of boat operators, crewmembers, and occupants.
2. Maintain compliance with federal, state, and local regulations.
3. Ensure environmental stewardship. This boating safety manual will facilitate the safe and compliant use of boats for research, teaching, and recreation for the University.

The main goals of this manual are to:

1. Establish safe boating standards for all University boating activities performed by students, faculty, staff, volunteers, and visitors.
2. Provide emergency response procedures.
3. Ensure responsible stewardship of the environment.

1.2 CONTENTS

The University of Washington Boating Safety Manual establishes minimum requirements for the operation of all University boats and vessels. University boats included in the University National Oceanographic Laboratory System ([UNOLS](#)) must adhere to any additional UNOLS requirements.

The University's Boating Safety Program includes the following:

1. Policy that pertains to all vessels operating under the auspices of the University
2. Guidelines for obtaining and maintaining boat operator authorization
3. Administrative procedures
4. Operational procedures

1.3 APPLICABILITY

All vessels and equipment operated by the University in U.S. waters, regardless of ownership, shall, at a minimum, conform to U.S. Coast Guard, state, and local requirements and to the standards set forth in this manual.

All vessels operated outside of U.S. Coast Guard jurisdiction shall at a minimum comply with U.S. Coast Guard regulations in addition to any applicable local requirements and to the standards set forth in this manual.

The provisions of these guidelines can be followed whenever University personnel are using a boat under University auspices, regardless of ownership of the boat.

Specific examples of boat operations under University auspices include persons engaged in research or earning academic credit, employees acting within the scope of their employment, and students engaged in any research operation including those receiving or providing boat operation instruction or involved in boat checkouts.

Boats used under University auspices includes:

1. Boats owned, supported, or administered by the University
2. Privately owned boats used by the University for scientific or educational purposes
3. Any other vessels used by the University for scientific or educational purposes

In case of joint operations, the lead institution will ensure that all applicable safety standards are met.

Privately owned vessels used by the University for scientific or educational purposes must be privately insured. UW insurance coverage for liability claims by passengers or third parties (per RCW 28B20.253 (3) <http://apps.leg.wa.gov/RCW/default.aspx?cite=28B.20.253>) is secondary to an individual's private insurance and would only apply if personal limits are exhausted and the vessel use is in the course and scope of work assigned as work for UW.

The provisions in these guidelines do not apply to boats rented from the Waterfront Activity Center or vessels used voluntarily for recreational purposes.

SECTION 2.0: ROLES AND RESPONSIBILITY

The University's [Presidential Order 55](#) outlines the overall responsibilities for environmental and occupational health and safety. Several University departments are involved with the operations of boats and boating safety. From small human-powered watercraft to large 65 foot and larger vessels with onboard laboratories, many tasks are taking place that depend on a boating safety program that ensures employees, students, and visitors are able to use a vessel and all of its features in a manner that is safe, compliant, and ensures environmental protection. The responsibilities for boating safety for the designated departments, designated groups, and personnel are as follows.

2.1 ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT (EH&S)

Environmental Health & Safety Department (EH&S) is the administering department of the university's boating safety manual and policy. EH&S maintains the template boating safety manual and policy and provides consultation to departments that are involved with boating activities. EH&S reviews workplace accidents and injuries that involve boats and conducts periodic compliance monitoring activities.

2.2 DEPARTMENT OWNER OR OPERATOR

The department owner or operator ensures that all federal, state, and local regulations, and University policy related to worker safety and boating safety are met. This person ensures that dedicated personnel are assigned to manage the safety of operations, crew, and passengers, and to maintain the boats; ensures personnel using boats have the resources needed to perform their duties, and that personnel are competent in their duties and appropriately trained; ensures that all people on boats are following safety requirements at all times. Other responsibilities are outlined below:

1. Authorizes department's boating program's operation
2. Assures compliance with the University's Boating Safety Manual
3. Takes immediate action for unsafe practices
4. Suspends boating operations that are considered to be unsafe or unwise

2.3 BOATING SAFETY ADVISORY COMMITTEE (BSAC)

The Boating Safety Advisory Committee (BSAC) will serve as an advisory body to EH&S and department boat owners and operators. The membership will consist of departmental personnel with boating safety responsibilities or expertise. Members include leadership representatives from departments that own and operate boats, along with consultation from Risk Services and the Assistant Attorney General's office. EH&S maintains the BSAC roster. The following duties are expected of the advisory group:

1. Assist with the review and revision of the boating safety manual annually or more frequently when changes are needed
2. Help establish University boating safety training courses or programs
3. May participate in the investigations of major boating-related accidents, incidents, and injuries to inquire into the nature and cause, and identify preventative measures
4. In coordination with EH&S and the departmental owner or operator, recommend safety improvements, retraining, reevaluation, or revocation of boating authorization

2.4 BOATING SAFETY PROGRAM MANAGER (BSM)

The boating safety program manager (BSM) is designated in EH&S and serves as a member of the BSAC.

Duties and responsibilities are as follows:

1. Reports to EH&S for the management of the Boating Safety Program; serves as the operational liaison for this program; and administers a boating safety program that complies with applicable regulations and policies of the University of Washington.
2. Responsible for the annual review, updates, and maintenance of the University's Boating Safety Manual
3. Serves as the institutional subject matter expert on boating safety requirements and best practices and provides consultation to University departments
4. Leads incident investigations with the involvement of the departmental representatives and, as needed, the BSAC
5. Has the ability to suspend boating operations that pose an immediate threat to health and safety in coordination with the responsible department and the BSAC
6. Facilitates the BSAC meetings
7. May grant exceptions to this manual in coordination with the BSAC and department

2.5 PRINCIPAL INVESTIGATOR OR SUPERVISOR

The principal investigator (PI) is an individual who is designated and given the authority by a University department, school, or administrative unit to direct the research program or project. The PI has the scientific and technical direction for the research. The PI has the responsibility and authority to enforce regulations and policies related to research and worker safety. This includes ensuring that the facilities are appropriate for the research

conducted, and for ensuring that personnel who will be involved with the project are trained.

1. PIs and supervisors are responsible for assuring that all boat operations that are part of a program under their direction are conducted in accordance with University's Boating Safety Manual.
2. PIs and supervisors should determine that all individuals assigned to boat operations related to their projects are properly authorized, as described in section 3.1 of this manual.

2.6 BOAT OPERATOR

The boat operator is the highest authority on board the vessel. Their scope is focused on safe boat operation, making travel decisions based on current and predicted weather patterns, ensuring the safety of all passengers, and ensuring all rules are understood and followed aboard the vessel. A designated boat operator is required to be on board. This does not mean the boat operator is steering the ship at all times, but rather is responsible for the entire operation of the vessel regardless of other staff present. Some key responsibilities are as follows:

1. Only University authorized boat operators may operate boats under University auspices, whether or not the boat is University owned. Exceptions may be granted by the BSM for vessels run by non-University owner/operators.
2. In U.S. waters, non-University owner/operators shall comply with the U.S. Coast Guard, state, and local regulations covering chartered vessels. In foreign waters, the designated responsible person should ensure that the vessel meets the equipment requirements of this manual.
3. The designated boat operator is responsible for all aspects of boating operations, regardless of any senior personnel present in the boat. These responsibilities include, but are not limited to:
 - a. Safety of the vessel and all persons on board
 - b. Operation of the vessel in compliance with federal, state, and local regulations and the Boating Safety Manual
 - c. Safe transport of the vessel to and from the launch site, if applicable
 - d. The safe operation of all equipment
 - e. Ensuring that all required operational and safety equipment is on board and that crewmembers and participants know the location and how to operate safety/survival equipment

- f. Ensuring that crew, passengers, and occupants receive safety training and orientation that is documented, including a review of the emergency procedures
- g. Reporting all accidents, incidents, boarding, citations, safety concerns, and issues to the BSM and to EH&S via the [Online Accident Reporting System \(OARS\)](#)

Failure to comply with provisions of the University's Boating Safety Manual may be cause for the revocation or restriction of the operator's authorization. However, any operator may deviate from the requirements of the boating safety policy to the extent necessary to prevent or minimize a situation that is likely to cause death, serious physical harm, damage to the vessel, or major environmental damage.

The operator or person in charge of a vessel is obligated by law to provide emergency assistance that can be safely provided to any individual in danger at sea. The operator or person in charge is subject to a fine and/or imprisonment for failure to do so.

2.7 CREW MEMBER

Larger vessels may have dedicated crewmembers who have responsibilities for work activities supporting the vessel's operation or assignment. The crewmembers must adhere to vessel and task-specific safety requirements for their assigned work and are responsible for reporting unsafe conditions to the vessel operator or to the departmental boat manager as soon as possible.

2.8 OCCUPANT

The occupant has the lowest authority in the boating safety program. Occupants are responsible for following the operator and boating safety requirements, and for reporting any potential unsafe conditions.

SECTION 3.0: GOVERNING STANDARDS

There are federal, state, and local regulations that apply to boating safety and environmental protection. The code of federal regulations (CFR) are enforced by the [United States Coast Guard \(USCG\)](#). The worker health and safety requirements are enforced by the federal Occupational Safety and Health Administration (OSHA) and Washington State Department of Labor & Industries (L&I). The pertinent regulations are summarized below:

1. [U.S. Coast Guard Boarding Policy \(USCG\) - Title 14, Section 89](#), of the United States Code authorizes the USCG to board vessels subject to the jurisdiction of the United States, anytime upon the high seas and upon waters over which the United States has jurisdiction to make inquiries, examinations, inspections, searches, seizures, and arrests.

2. [Navigation and Navigable Waters 33 CFR](#): This Code of Federal Regulations governs navigation and navigable waters.
3. [Duty to Provide Assistance at Sea: \(46 USC 2304\)](#): The person in charge of a vessel is obligated by law to provide assistance that can be safely provided to any individual in danger at sea. The master or person in charge is subject to a fine and/or imprisonment for failure to do so.
4. Uninspected Vessel Requirements ([46 CFR Chapter I Subchapter C](#)) applies to UW vessels under 300 gross tons and vessels with no Oceanographic Research Vessel (ORV) Designation.
5. Employer Responsibilities for Safe Workplace: Per Washington Administrative Code [WAC 296-800-110](#), regardless of whether or not work is taking place on land or on water, the employer is obligated to provide a safe workplace. On the water, the captain is the employer's representative per L&I. The L&I website for Boats and Employee Safety outlines additional regulations that apply to boats operating on state waters: <http://www.lni.wa.gov/safety/topics/atoz/boats/>. The Washington State Department of Labor & Industries, Division of Occupational Safety and Health also has a [Washington state directive for the use of personal floatation devices \(PFDs\)](#).
6. [Boating Safety Education](#): The Washington State Department of Fish and Wildlife prescribes boating safety education requirements for boat operators in Washington state. If operating a motorboat in Washington, personnel must complete training and have a Washington State Boater Education Card with them when operating a boat with 15 horsepower or greater, unless they have a superseding license or certification.

3.1 BOAT SIZES AND STANDARDS

The classes of vessels are based on length as measured from the tip of the bow in a straight line to the stern. At the University, all of the classes of vessels listed below are used, in addition to rowboats, kayaks, and canoes.

1. Class A: Less than 16 feet
2. Class I: 16 feet to less than 26 feet
3. Class II: 26 feet to less than 40 feet
4. Class III: 40 feet to less than 65 feet
5. Class IIII: 65 feet and above

SECTION 4.0: RECORDKEEPING AND ACCIDENT REPORTING

4.1 MAINTENANCE OF RECORDS

1. EH&S will maintain the University's Boating Safety Manual which includes the template float plan, template inspection checklist, and records of training provided by EH&S, per the [University](#) and departmental records retention schedule.
2. Each department is required to maintain records for equipment maintenance, boat use, training and certification of personnel, and other records specific to the boats they own and operate, per the [University](#) and departmental records retention schedule.
3. Departmental operator records to be kept must include training, time underway, location, vessel and any other pertinent information. Copies of these activities are to be kept in the operator's file.
4. Other records kept must include an up-to-date record of vessel activity, engine time, and maintenance/repairs for the vessel and for its trailer if applicable.

4.2 ACCIDENT AND INCIDENT REPORTING

All accidents, injuries, and near miss events should be reported to EH&S as soon as possible via the [Online Accident Reporting System \(OARS\)](#).

Any incident resulting in a Marine Casualty must be reported to the U.S. Coast Guard immediately after it occurs or within five days. The U.S. Coast Guard defines a Marine Casualty as any accident causing loss of the vessel, grounding, collision, loss of propulsion, condition affecting seaworthiness, loss of life, serious injury, extensive property damage, or serious environmental harm. The USCG form used to report a marine casualty is located at this site <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/CG-5PC/INV/docs/CG2692.pdf>.

Prior to reporting, the responsible party should contact their departmental boat owner, the BSM, or the BSAC to ensure proper reporting. In some cases, an accident may be required to be reported to state and local authorities.

The BSAC may be called upon to participate in incident investigations where personal injury or illness has occurred, and to help identify preventative measures.

4.3 REPORTING OIL/FUEL SPILLS

Report these emergencies to the Washington Emergency Management Division (EMD) 1-800-258-5990 and the National Response Center at 1-800-424-8802. Notify EH&S of all spills by calling 206-543-0467 during normal business hours or 911 after normal business hours.

Boating departments must outline communication procedures to spill response contractors used by that department.

PART 2: POLICIES FOR VESSELS UNDER 40 FEET

SECTION 5.0: ADMINISTRATIVE PROCEDURES AND REQUIREMENTS

5.1 NON-MOTORED VESSELS

Departments that own or operate non-motorized vessels such as kayaks, canoes, and rowboats must meet the requirements listed below to ensure safety of personnel and maintenance of the vessel:

1. Safety orientation with emergency procedures for each operator and occupant
2. Maintenance checks of vessels by the owner or operator
3. Appropriate safety equipment for the area of operation
4. Personal floatation devices (PFDs) for each operator and occupant
5. Communications device
6. Log of time on water (check in/out)
7. First aid/CPR training for personnel responsible for operations
8. University-approved written agreements/waivers for rentals

These requirements are much less extensive than for motorized vessels. The additional requirements below apply to motorized boats.

5.2 AUTHORIZATION OF OPERATORS FOR CLASS I AND II MOTORED VESSELS

To become an authorized boat operator, applicants should submit an application form ([Appendix 6](#)) to their department boat owner or operator. In addition, the applicant must complete the following steps:

1. Complete a boating safety course from an approved provider and licensing requirements listed below in Section 5.6.
2. Provide documentation of, and/or acquire, practical experience in operating a boat.
3. Demonstrate proficiency in the safe operation of the proposed type of boat in local conditions.
4. Demonstrate proficiency in the operation of any specialty equipment and procedures specific to the boat, to the departmental boat owner or operator.

5.3 MAINTAINING AUTHORIZATION

Re-authorization for boat operators by the department is required every three years.

5.4 REVOCATION OF AUTHORIZATION

A boat operator's authorization may be revoked by the department for any action deemed unsafe or unlawful, or for not meeting the procedural requirements of the University. The BSM or BSAC may recommend revoking a boat operator's authorization to the department if the operator has participated in unsafe or unlawful actions.

5.5 RE-AUTHORIZATION

If a boat operator's authorization is revoked, they may be re-qualified after the operator complies with such conditions as the department determines with recommendations from the BSM and, if needed, the BSAC.

5.6 TRAINING AND OPERATOR LICENSING

All personnel who work on boats must be sufficiently trained on the boating requirements and rules, potential hazards, safe work practices, and emergency procedures. All training must be documented to include the content covered, the name of the person trained, and the date of training. The training record is maintained by the department/supervisor of boat operators and personnel. The following training and licensing are required as a minimum for motorboat vessel operators:

1. **Class A & I (less than 26 feet):** Successful completion of Washington State Boating Safety Education Course plus underway hands-on training including vessel and local conditions/environment familiarization; Scientific Boating Safety Association (SBSA) motorboat operator training course (MOTC) or equivalent MOTC style course is recommended
2. **Class II (26 feet to less than 40 feet):** All the requirements listed above plus a SBSA MOTC style course
3. **All Operators:** Skills/knowledge check-off sheets (to be kept in operator's permanent file) and appropriate level of first aid/CPR training (exemption for USCG licensed operators)

5.7 AREA OF OPERATION

Below are the standard definitions found in the Code of Federal Regulations that define operating areas based on the hazards associated with small vessel operations in those environments. Departmental vessel owners will restrict vessel operations to areas suitable for the size, type, and stability of the vessels being used and the experience level of the vessel operator.

These definitions apply only to the small vessel section of the manual.

1. **PROTECTED WATERS:** Operation in sheltered waters presenting no special hazards such as most rivers, bays, harbors, and lakes. Local examples of protected water are Elliot Bay, Ship Canal, and Lake Washington.
2. **PARTIALLY PROTECTED:** Operation in waters less than 20 nautical miles of the mouth of a harbor of safe refuge (Harbor of Safe Refuge is defined in [46 CFR 175.400](#)). A local example is Puget Sound.
3. **EXPOSED:** Operation in waters more than 20 nautical miles from the mouth of a harbor of safe refuge. Local examples are the Strait of Juan de Fuca and Coastal regions.

Friday Harbor Labs maintains specific designations for the areas of operation in the San Juan Islands.

5.8 VESSEL AND EQUIPMENT MAINTENANCE

A preventative maintenance schedule must be in place for all University vessels to verify that major parts are working properly, to prevent equipment from malfunctioning, and to address repairs in a timely fashion. Any maintenance issues during the trip must be reported immediately to the boat operator or designated departmental maintenance manager. Examples of reportable issues are failed bilge pump, leaky fuel line, engine operation problems or rough sound, and problems with engine starting cord. Gas tanks must be filled before the departure if levels are not sufficient.

Maintenance logs must be kept for motored vessels and must remain current. Contractors performing maintenance fall under their company's environmental health and safety policies and procedures, unless they are daily supervised by UW employees, in which case they would follow UW procedures.

In addition, maintenance checks of major vessel components must be conducted during each day of use. Other requirements include the following:

1. The operator must be familiar with the operation of all vessel equipment and must inspect all emergency equipment prior to departure.
2. The operator and/or crewmember must notify the responsible person of any malfunctioning equipment.

3. The nature of specific operations may require vessels and boating equipment to meet higher standards than these guidelines as determined by the departmental authority, BSM, or BSAC.

5.9 CHARTERING VESSELS

If a commercial charter vessel is engaged and compensation is provided under the auspices of the UW, it is the responsibility of the supervising faculty member, staff, or principal investigator to ensure that the vessel is properly licensed, insured, and inspected. Further, vessel operators must have and maintain a current captain's license appropriate to the tonnage of the vessel and number of passengers on board.

When conducting activities on vessels not owned or operated by the University of Washington, ensure that:

1. Safety briefings occur that include a discussion of roles and responsibilities.
2. PFDs are available and maintained for use.
3. Communications devices are available and working.
4. The trip is registered with Study Abroad when applicable.

The University-National Oceanographic Laboratory System (UNOLS) has offered guidance for the chartering of non-institutional vessels, which is found here https://www.unols.org/sites/default/files/RVSS_Edition_10_July2015.pdf in section 18-1 and Appendix D-1.

SECTION 6.0: OPERATIONAL PROCEDURES

6.1 FLOAT PLANS

The use of float plans (see [Appendix 2](#)) and a contact list in case of an overdue vessel is required and should be submitted to departmental boat owners according to departmental policy. For trips in remote sites and/or trips with duration of multiple days, a communication schedule is required to be established before departure.

1. The following information is required on all float plans:
 - a. Type, class, and size of boat used
 - b. Dates of the departure and the return
 - c. Areas and sites visited and travelled through
 - d. Principal investigator
 - e. Names of everyone on board

- f. Communication schedule intervals
 - g. Personal protective equipment (PPE) and safety equipment on board
 - h. Emergency signaling equipment
 - i. Emergency contact information for the people on board
2. The use of personal locator beacons (PLBs), emergency position indicating radio beacons (EPIRBs) and/or similar communication devices is recommended in nearshore waters and strongly recommended for exposed waters. See [Appendix I](#).

6.2 SAFETY CHECKS

Prior to departure, the boat operator is required to conduct the following safety checks:

1. Perform a functional inspection of the boat and equipment, including communications, fuel level, engine oil, and bilges.
2. Assess all environmental conditions such as weather and water conditions.
3. Give a briefing to all on board including, at minimum, emergency procedures, location of personal floatation devices (PFDs), fire extinguishers, person overboard procedures, and methods of seeking assistance.

Upon return, the boat operator should:

1. Officially, closeout the float plan as agreed upon before departure.
2. Notify the responsible person of any problems with the boat or equipment within 24 hours of return.

6.3 CREW REQUIREMENTS

Vessels should always be operated with two or more persons aboard. The departmental boat owner can exempt boat operations with a single operator if two vessels are operating in close proximity with radio contact or a single vessel in close to shore or protected water.

6.4 STABILITY

No person may operate a vessel loaded in a manner that will jeopardize the safety of the operator or crew. All boats used by the University must abide by USCG rules on passenger and weight capacity limits, and must have information posted on the vessel. The captain of the vessel must stay within these constraints and have the mass distributed in the correct manner per the boat's engineering design specifications.

6.5 COMMUNICATIONS

For research-based, scheduled University functions, cell phone, satellite phone, or radio communications with agreed upon interval frequency should be established and maintained with a responsible contact. Changes to communication windows must be relayed and understood by all parties, and any missed communications for a duration of thirty minutes or greater may warrant USCG search and rescue inquiry. An ashore contact should be designated to monitor the vessel from land.

6.6 PACIFIC NORTHWEST NAVIGATIONAL ISSUES

There are many navigational issues to be aware of when operating a vessel in Coastal Pacific Northwest waters, Puget Sound, and connected waterways. A boat operator should be aware of the procedures for dealing with issues that include, but are not limited to, the following:

1. Puget Sound shipping lanes and Vessel Traffic Service (VTS)
2. Ballard Locks
3. Tides and currents
4. Bar crossings

6.7 WEATHER

Inclement weather may affect safe boat operation of both small and large vessels. Weather monitoring before trip departure is a responsibility of the boat operator. When small craft advisories or visibly bad conditions are present or building up, it is essential to postpone boat operations for a later date. The National Weather Service Marine Forecast webpage <http://www.nws.noaa.gov/om/marine/home.htm> is a valuable tool and it or a similar forecasting authority should be used to determine weather parameters for vessel operations.

In the event that visibility is reduced, it is important to make operational changes to account for the condition changes. These changes typically include:

1. Slowing the vessel speed.
2. Having multiple crewmembers help look for dangers approaching.
3. Raising any reflectors and turning lights on.
4. Using sound signals.
5. Using GPS and water depth sensors.
6. Preparing to stop travel altogether.

7. Anchoring up in a safe location.

6.8 LAUNCHING

When launching vessels, confirm the following:

1. Drain plugs are installed.
2. All boat straps are taken off.
3. Fuel flow to the motor is turned on.
4. Motor lever is in the position that allows the motor to be lowered into the water.

Maintain 360-degree field of vision while backing the boat in to prevent any collisions with other trucks or vessels launching or trailering. Have a partner outside the vehicle watching the overall process and hand signaling to aid in the overall launching process.

6.9 TRAILERING

To become qualified to tow a boat and trailer, the operator or designated driver should demonstrate to their departmental boat owner or operator, the proper procedures for towing the boat and trailer over the road, as well as launching and retrieving the boat from the trailer into the water. Consider the following as applicable:

1. Secure the vessel with straps.
2. Raise and lock the motor.
3. If there is a backup motor, make sure that it is secured.
4. Remove boat drain plugs once the boat is out of the water.
5. Remove or secure loose items.
6. Turn off all batteries.
7. Turn off all fuel flow to the outboard.
8. Lower any protruding items that may be hazardous when going below overpasses (fishing poles, antennas, backup lifeboats).

SECTION 7.0: EMERGENCY PROCEDURES:

Even with meticulous planning, adherence to boating safety laws and rules of the road, and performing regular maintenance, emergencies may occur. An emergency plan should be developed ahead of time that accounts for all anticipated emergencies ([Appendix 4](#)). Below are considerations to account for in your emergency plan.

7.1 VESSEL BREAKDOWN

In the event that a vessel breaks down, it is important to first attempt reasonable repairs before making an emergency call that may initiate a search and rescue.

1. Adjust the vessels speed to accommodate the conditions.
2. Investigate the root cause of the problem.
3. Repair the problem in a safe manner.
4. If repair is not feasible, use the vessel's emergency signals (horn and lights) to attract attention while radioing for help.

7.2 GROUNDING, STRIKING SUBMERGED OBJECTS, AND BOAT LEAKS

In the event that the vessel runs aground, strikes a submerged object, or otherwise develops a leak it is important to:

1. Make sure that everyone has an immersion suit or life jacket on.
2. Account for everyone and move to one area.
3. Start bilge-pumping operation.
4. Inspect and assess boat damage.
5. Stop or reduce the flow from the leak.
6. If the leak cannot be stopped, try to get to a safe location and use distress signals including marine VHF radio.

7.3 VESSEL CAPSIZING OR SINKING

From a historical perspective, many boats that sink only partially sink and remain afloat for a portion of time. If the entire vessel succumbs to conditions and completely sinks, it is still likely that there will be floating contents from the craft. If the vessel begins to sink, it is important to behave with a sense of urgency but not succumb to panic. Follow these recommended steps:

1. Immediately put on all safety gear that is available (PFD or immersion suit).
2. As the vessel sinks congregate personnel in an area and attempt to board the emergency boat if available.

3. If no survival boat is available, attempt to stay on top of the craft as long as possible, as a boat surrounded by debris is easier for rescuers to spot.
4. Use emergency signaling and radio for help to attract other boats' attention.
5. Monitor for signs of hypothermia if forced to enter the water.

7.4 OVERBOARD PERSON

In the event a person falls overboard:

1. Shout "person-over-board" plus the side they fell over (e.g., "person-over-board to starboard.").
2. Mark your position on GPS.
3. Instruct others to watch the person and point in the direction of the person.
4. Throw floatation objects into the water.
5. Slow the vessel and turn it toward the side the person went over.
6. Maneuver to recover the person.
7. Stop propeller while in close proximity to the person overboard.
8. Treat the person for hypothermia.
9. Make a distress call if the person cannot be located or the operator has doubts about recovery.

7.5 OIL/FUEL SPILLS

The Washington State Department of Ecology has specific spill reporting requirements for vessel emergencies when there is a discharge or a substantial threat of an oil discharge into Washington waters.

1. Small vessel operators should immediately report these emergencies to the Washington Emergency Management Division (EMD) at 1.800.258.5990 and the National Response Center at 1.800.424.8802. Notify EH&S of all spills by calling 206.543.0467 during normal business hours or 9-1-1 after normal business hours.

2. Large vessel operators (greater than 400 gross tons) should follow emergency procedures outlined in their Non-Tank Vessel Response Plan. In case of the Research Vessel, the Thomas G. Thompson, and the Rachel Carson, the School of Oceanography has a contract with the Witt O'Brien's Company to ensure compliance with multiple U.S., federal, and state regulations, and notification requirements. Witt O'Brien's "Qualified Individuals" coordinate oil spills that occur on navigable water. Oceanography staff will notify EH&S to manage regulatory reporting and waste management.
3. If an oil spill occurs on land, such as when transferring fuel to vessels, contact EH&S at 206.543.0467 during normal business hours or 9-1-1 after business hours. EH&S will initiate the UW's Facility Response Plan if the oil reaches navigable waters.

7.6 DISTRESS CALL

Whether or not assistance or rescue is needed during the trip is up to the discretion of the operator. Some common reasons for a distress call are a disabled vessel, a serious injury or illness, a vessel is likely to sink, or ship evacuation needs to take place. During the distress call, the operator should remain calm and state the following:

1. The reason for calling.
2. The vessel name or description.
3. The vessel location.
4. Urgency

7.7 OTHER HEALTH AND SAFETY CONSIDERATIONS

Due to the unique environments of vessels, special care must be taken to avoid serious injury or loss of property. Below are additional considerations:

1. **Personal protective equipment (PPE):** Follow [UW PPE](#) guidelines for selecting proper PPE based on laboratory protocol and expected hazards. Common PPE includes a spectrum that covers hearing protection, eye protection, body contact protection, and gloves.
2. **Diving safety:** For diving safety related to boating, please refer to the [UW Diving Safety Manual](#) for safety rules and updates. Diving and individual divers must be approved and certified by the University of Washington diving safety officer.
3. **Physical hazards:** As collisions are a potential risk during vessel use, it is important to give way to all vessels that are on an intercept course with your vessel. Early defensive adjustments are key to preventing accidents. In addition, adhere to no wake speed limits and be on the lookout for swimmers and divers. Since diving flags

may be improperly used at times, it is important to be extra watchful in case someone makes a mistake.

4. **Chemical, radioactive, and biological hazards:** Vessels may contain on-board labs, fuels, batteries, lubricants, research chemicals, radioactive materials, biological agents, and other chemicals. The use of PPE is required for certain tasks. For chemical use in labs, please see the [UW Chemical Hygiene Plan](#). For biohazardous materials, a Biological Use Authorization may be required. For more information, please access the [UW Biosafety Manual](#). For radioactive materials, review by a radiation safety officer is required. More information is available on the [UW Radiation Safety](#) page.
5. **Confined space:** A confined space is a space that is large enough for a person to enter/occupy to perform a task, and has limited or restricted means for entry or exit; the space is not designed for long-term human occupancy. If confined spaces contain hazards, a permit to occupy is required. If confined spaces exist on boats or in the work environment, the requirements in the [UW Confined Space Entry Program](#) must be met.
6. **Control of Hazardous Energy-Lockout/Tagout:** To assure UW personnel safety and to prevent personal injury that could result from the unexpected start-up, energization, or release of stored energy during the servicing and maintenance of equipment, follow the procedures outlined in the [UW Hazardous Energy Control-Lockout/Tagout \(LOTO\) Program](#) for compliance with Washington state safety regulations, WAC 296-803, and WAC 296-155.
7. **Electrical hazards and battery safety:** The state of Washington has laws pertaining to [electrical safety](#) for general application under WAC 296-24 Part L. This applies to UW vessels with electronics equipment and boat wiring standards and practices.
8. **Noise/Hearing conservation:** Personnel working in areas with noise levels meeting or exceeding 85 A-weighted decibels (dBA) over an eight-hour period are required to enroll in the University's Hearing Loss Prevention Program. This includes audiometric testing, training, and mandatory use of hearing protection, among other requirements. If elevated noise levels are suspected, contact EH&S to monitor noise levels. See the [University's Hearing Loss Prevention Program](#) website for more information.
9. **Slip, trip, and fall hazards:** Vessels commonly have stairs, ladders, and uneven surfaces. There may also be wet surfaces. These obstacles increase the likelihood of an injury. It is important to remove or mark tripping hazards and pay attention at all times when maneuvering around a vessel. Walking surfaces should be slip resistant and be maintained as dry as possible.

10. **Job hazard analysis:** Conduct a job hazard analysis prior to any new task or work assignment. This helps to identify hazards and measures to mitigate the risk of exposure to the hazards. EH&S offers a [template job hazard analysis form](#) to help you document this and train personnel.
11. **Wildlife:** As a vessel operator, follow Washington state laws and give the right of way to wildlife by staying at a safe distance. Washington state laws specifically state it is unlawful to:
 - a. Operate vessel within 200 yards of a whale
 - b. Intercept a whale's path
 - c. Fail to disengage a vehicle's transmission when within 200 yards of a whale
 - d. Harass or injure marine mammals of any kind
 - e. Harass animals of any kind

PART 3: POLICIES FOR OVER 40 FEET

SECTION 8.0: LARGE VESSEL FLEET

8.1 VESSEL CLASSIFICATION

The University of Washington manages two Class III vessels (40 to 65 feet):

1. [R/V Kittiwake](#)
2. [R/V Jack Robertson](#)

The University of Washington manages four Class IIII vessels (more than 65 feet):

1. [R/V Light](#)
2. [R/V Rachel Carson](#)
3. [R/V Thomas G Thompson](#)

8.2 REGULATING POLICIES

In addition to the general regulations listed in section 3, the following may apply to large vessels:

1. University vessels participating in the University National Oceanographic Laboratory System (UNOLS) must also adhere to the UNOLS safety standards.
<https://www.unols.org/document/research-vessel-safety-standards-rvss>

2. Oceanographic Research Vessel (ORV) Designation: The Coast guard provides an interpretation of the Oceanographic Research Vessel (ORV) designation to encourage oceanographic and limnological study and research that further the national interest. The ORV regulations can be found in [46 CFR Chapter I Subchapter A Part 3](#).

8.3 REQUIREMENTS FOR OPERATORS

Each department that owns and operates large vessels are responsible for the oversight of training for large vessel operators. These operators must hold and maintain USCG licensing or designation as appropriate for the tonnage, local mission, geography, conditions, operations, crew requirements, and possibility of non-crew on board. Documentation of the appropriate license must be kept in the department's personnel files.

8.4 OPERATIONAL AND EMERGENCY PROCEDURES

R/V Thompson and R/V Carson are UNOLS vessels and follow the UNOLS [Research Vessel Safety Standards](#). In addition, the R/V Thompson is also required by the International Maritime Organization (IMO) to follow the International Safety Management (ISM) guidelines for having a Safety Management System (SMS). The SMS for R/V Thompson is located [here](#).

The operational and emergency procedures of other large vessels in the UW fleet can be requested from the vessel's operating department.

Where departmental policies are unavailable large vessel operators will default to EH&S policies for worker safety and applicable USCG regulations.

APPENDIX 1

SAFETY EQUIPMENT

Vessels operating in coastal waters should carry at least the following items:

- One VHF or agency radio, or cell phone, whichever is more appropriate to the environment
- Class I, II, III or V PFD for each person on board, plus at least one 'throwable' device
- Signal flares – smoke flare(s) and ≥ 3 day/night signaling devices
- Fire extinguisher(s) which meet or exceed those required by law
- Horn, whistle, or other audible signaling device
- Proper registration and documentation for the vessel. Each vessel must meet federal, state, and local numbering requirements if required.

Suggested equipment as appropriate for vessel and operations:

- Alternate method of communication and a personal locator beacon or comparable emergency signaling device (e.g., EPIRB, PLB, etc.)
- Anchor and anchor line
- Oars or paddles
- Emergency repair kit and tools
- First aid kit and, if diving, an oxygen unit, rescue blanket, etc.
- Running and RAM lights as needed
- Bilge pumps, manual and electric if feasible
- Dock lines
- Boat hook
- Publications – Rules of the Road, Tide Tables, area charts, WA boater guide
- Navigational items - Compass, GPS, Depth Sounder
- Drinking water
- Spare fuel and oil, if needed
- Sea anchor
- Spare parts including prop, nut, etc.
- Extra lines and tow harness
- Extra food rations
- Flags – dive and alpha
- Spare key and deadman clip

For exposed waters, vessels should come equipped with:

- 406Mhz EPIRB and satellite phone
- Immersion suits and exposure work suits
- Life raft
- Second engine/Kicker motor

APPENDIX 2

FLOAT PLAN

(Template float plan; departments may use another form as long as it covers the same minimum information)

All vessels operating under the auspices of the University of Washington must, at the minimum, comply with local, state and USCG regulations.

Date: _____ Departure time: _____ Estimated return: _____

Name & description of vessel: _____

_____ # Of people on board: _____

Names: _____ Contact #: _____

Area of operations (be specific): _____

Type of activity: _____

Point of departure: _____

Description of tow vehicle if applicable: _____

If overdue, contact: _____ Contact #: _____

Emergency plan, including activation time: _____

Local information & emergency numbers

Emergency:

Coast Guard:

VHF emergency channel:

APPENDIX 3

REQUEST FOR SCIENTIFIC BOATING PROJECT APPROVAL OR RENEWAL

(Template approval form; departments may use another form as long as it covers the same minimum information)

1. Name of project: _____
2. Name of Principal Investigator or Administrative Officer: _____
3. Department: _____
4. New or an ongoing project? _____
5. How will boat(s) be used to support this project? Use a separate sheet if necessary:

6. Vessel name & description: _____
7. Vessel owner & Operator(s): _____
8. Names & affiliation of those on board: _____

9. Location of project: _____

10. Dates of start and end of operations: _____
11. Special conditions or logistical considerations: _____

12. Emergency procedures (EMS activation, nearest medical aid, etc.): _____

Other universities, institutions or groups involved with the project: _____

FOR OFFICIAL USE ONLY

Project #: _____	Renew on: _____
_____	_____
<i>Signature, Departmental Authority</i>	<i>Date</i>



APPENDIX 4

BOATING EMERGENCY MANAGEMENT PROCEDURES

Introduction

Most boating incidents take place through the culmination of several factors leading up to a single point when unsafe situations combine and pass a critical point, resulting in an emergency situation. Identifying these factors and correcting them immediately is the best course of action.

General Procedures (Personnel Injury)

The nature and severity of personnel injury shall be the determining factor for the mode and method of patient transport.

Make contact with the victim, and if safe, rescue as required.

1. Establish ABC's (airway, breathing, circulation), then apply first aid as required.
2. Determine severity and select the mode of transport. (Self-transport, USCG, or EMS)
3. As applicable, contact the pre-designated land base, USCG channel 16 VHF, or EMS 9-1-1 or local equivalent.
4. Coordinate with EMS for patient transfer site and ETA.
5. Notify the departmental boat owner and the boating safety program manager.
6. Complete the [Online Accident Reporting System \(OARS\)](#) form.

General Procedures (Non-urgent Disabled or Damaged Vessel)

For non-emergency-related damage or disabling situations, it is the responsibility of the operator to suspend the mission and assess all conditions, then take appropriate action. The operator should communicate the situation to the designated mother ship or land-based point of contact. A communication schedule should be established to monitor the situation until safe moorage is obtained.

1. Apply measures to minimize or correct the situation and contact land base or mother ship to communicate the following:
 - Location
 - Nature of problem
 - Type of assistance needed
 - Number of persons on board
 - Establish a communication schedule based on severity.

2. Arrange USCG or local authority's assistance if another assistance provider (such as Vessel Assist) is not available. Hail on VHF Channel 16 (or local equivalent) and follow their directions.
 - Communicate information listed above.
 - Request notification of the land base that is holding your float plan.
3. Notify the departmental boat owner or the boating safety program manager.
4. Complete the [Online Accident Reporting System \(OARS\)](#) form if required.

Emergency Procedures (Collision, Fire, Flooding, Grounding, Crew overboard)

Severe situations that can lead to the loss of life and property are collision, fire, flooding, grounding and crew overboard. Each of these situations requires the operator to immediately initiate measures to correct the situation. Additionally, the USCG and/or another designated agency must be notified to facilitate rescue and/or assistance.

1. Initiate control measures to prevent/minimize loss of life and the vessel.
2. Contact USCG or local authorities on Channel 16 VHF:
 - MAYDAY, MAYDAY, MAYDAY!
 - Location (Speak slowly and repeat position)
 - Nature of distress
 - Vessel name, ID number & description
 - Number of people on board
3. Request notification of the departmental boat owner or the boating safety program manager as soon as possible.
4. Complete the [Online Accident Reporting System \(OARS\)](#) form within 24 hours of the incident.

APPENDIX 5

TEMPLATE UNDERWAY HOURS LOG

Individual Underway Hours Log						
Name						
Department						
Month/Year						
Signature				Date		
Date Day / Night	General Description of Mission Type of Operations and Comments	Area or Location (Inland/Offshore)	Vessel Size	Vessel Propulsion Type and Number	Vessel Launch Method	Total Time Underway
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						
Day / Night						



APPENDIX 6

UNIVERSITY OF WASHINGTON BOATING SAFETY PROGRAM APPLICATION AND VERIFICATION OF BOATER'S TRAINING AND EXPERIENCE

(Template form; departments may use another form as long as it covers the same minimum information)

Name: _____ UWNetID #: _____ Date: _____

Phone: _____ E-mail: _____

Working with: _____ Dates: _____

Boat check out: _____ Last date U/W: _____

Vessel experience, past 24 months:

Hours underway: _____

Operating areas: _____

Additional training/experience: _____

Trailer/launch	___	Anchoring	___	1 st aid	___
Beach launch	___	Hoist launch	___	CPR/AED	___
VHF	___	Navigation	___	Oxygen	___
Electronics	___	Trawling	___		___
Restricted visibility	___	Instr. deploy	___		___
Towing	___	Scuba ops	___		___

Emergency contact: _____

This is to verify that _____ is current as a small boat operator.

Supervisor signature: _____

Supervisor's contact information: _____

The supervisor should maintain this form with boating safety manual records.